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EXAMINER	
MARKHAM, WESLEY D	
ART UNIT	PAPER NUMBER
1762	

DATE MAILED: 02/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/811,065	HAINES, JAY A.	
	Examiner	Art Unit	
	Wesley D. Markham	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23 and 30-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23 and 30-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2 total*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Acknowledgement is made of the preliminary amendment filed by the applicant on 12/14/2005, in which Claims 24 – 29 were canceled and Claims 30 – 35 were added. No new matter has been added by this amendment. **Claims 1 – 23 and 30 – 35** are currently pending in U.S. Application Serial No. 10/811,065, and an Office action on the merits follows.

Information Disclosure Statement

2. The IDSs filed by the applicant on 8/9/2004 and 12/14/2005 are acknowledged by the examiner and the references listed thereon have been considered as indicated on the PTO-1449 forms.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 3 – 23, and 30 – 35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Independent **Claim 1** (from which **Claims 3 – 23 and 30 – 35** depend) requires, in part, that "the surface temperature of the resultant coated wall is lowered such that

less energy is consumed to cool the interior of said building". Dependent **Claims 20 – 23** further require that the surface temperature of the coated wall be lowered by a specific temperature. These temperature comparison limitations render the scope of the aforementioned claims vague and indefinite because it is unclear what "the surface temperature of the resultant coated wall" is lowered in comparison to. In other words, what temperature is "the surface temperature of the resultant coated wall" compared to in order to determine whether or not the surface temperature is "lowered" in the context of the claimed invention?

6. The term "dark" in **Claim 16** is a relative term which renders the claim indefinite. The term "dark" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Specifically, Claim 16 requires that the wall paint be a "dark color". However, the specification does not define what constitutes a "dark color" and what does not, and there does not appear to be an art-recognized definition for "dark color" as used in the applicant's specification and claims.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1 – 3, 6 – 17, 20 – 23, 30, and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Krauthauser et al. (USPN 5,962,143).
9. Regarding independent **Claims 1 and 2**, Krauthauser et al. teaches a method of painting an external vertical wall of a building (Col.5, lines 3 – 24), the method comprising coating one or more external vertical walls of the building with a heat reflective wall paint comprising at least one heat reflective metal oxide pigment (Col.1, lines 5 – 30, Col.2, lines 21 – 45 and 65 – 67, Col.3, lines 1 – 50, Col.4, lines 17 – 19, Col.4, line 35 – Col.5, line 35), wherein the surface temperature of the coated wall is lowered such that less energy is consumed to cool the interior of the building (Col.1, lines 5 – 30, Col.2, lines 21 – 28, Col.5, lines 3 – 35). Krauthauser et al. also teaches that the paint comprises titanium dioxide (**Claim 3**) (Col.3, lines 8 and 25); the coated wall reflects light having the IR wavelengths claimed by the applicant (**Claims 6 – 11**) (Col.2, lines 21 – 28 and 63 – 64; Col.4, lines 7 – 13); the IR reflectance is "more than 50%", which is within the ranges claimed by the applicant (**Claims 12 – 14**) (Col.2, lines 21 – 28 and 63 – 64; Col.4, lines 7 – 13); the heat reflective wall paint is a dark color such as black, green, red, blue, etc. (**Claims 15 – 17**) (Col.2, lines 21 – 23, Col.3, line 1 – Col.4, line 34); and applying a primer to the walls prior to coating (**Claim 30**) (Col.5, lines 9 – 16). Regarding **Claim 34**, all coatings, including primers, have some sort of surface texture (e.g., smooth, fine roughness, high roughness, etc.). Therefore, the primer of Krauthauser et al. is reasonably considered to be a "textured primer". Regarding Claims 20 – 23,

Krauthauser et al. does not explicitly teach that the surface temperature of the coated wall is lowered by at least 20° F, at least 30° F, at least 40° F, and/or at least 50° F, as recited in **Claims 20 – 23**. Specifically, Krauthauser et al. is silent regarding the amount of temperature reduction the coated wall(s) experience. However, the process of Krauthauser et al. (i.e., applying a heat / IR reflective paint comprising heat reflective metal oxide pigment(s) to a building / wall) is identical to the applicant's claimed process, and the amount of IR or heat radiation reflected by the paint of Krauthauser et al. (i.e., more than 50%) is in the range disclosed and claimed by the applicant. Therefore, since the paint of Krauthauser et al. functions in the same manner and to the same degree as the applicant's claimed paint, the painted wall of Krauthauser et al. would have inherently had reduced surface temperature(s) in the range claimed by the applicant.

10. Claims 1 – 3, 5 – 17, and 20 – 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Yanagimoto et al. (USPN 6,521,038).

11. Regarding independent **Claims 1 and 2**, Yanagimoto et al. teaches a method of painting an external vertical wall of a building (Col.1, lines 5 – 55), the method comprising coating one or more external vertical walls of the building with a heat reflective wall paint comprising at least one heat reflective metal oxide pigment (Col.1, lines 5 – 55, Col.2, lines 1 – 42, Col.4, lines 44 – 53, Col.5, line 46 – Col.6, line 32, Col.7, lines 25 – 61), wherein the surface temperature of the coated wall is lowered such that less energy is consumed to cool the interior of the building (Col.1,

lines 5 – 55, Col.2, lines 1 – 20). Yanagimoto et al. also teaches that the paint comprises titanium dioxide (**Claim 3**) (Col.4, line 46); the paint comprises a metal oxide selected from the group claimed by the applicant (**Claim 5**) (Col.4, line 48; Col.5, line 57); the coated wall reflects light having the IR wavelengths claimed by the applicant (**Claims 6 – 11**) (Abstract, Col.1, lines 5 – 19); and the heat reflective wall paint is a dark color such as black, green, red, blue, etc. (**Claims 15 – 17**) (Col.2, lines 3 – 10, Col.5, lines 52 – 57). Regarding **Claims 12 – 14**, Yanagimoto is silent regarding the IR reflectance of the coated wall (e.g., whether or not it is above 30%, 50%, or 70%). However, the paint of Yanagimoto et al. (i.e., a heat / IR reflective paint comprising IR reflective metal oxide pigments) is identical to the applicant's claimed paint. Therefore, unless essential limitations are missing from the claims, the painted wall of Yanagimoto et al. would have inherently reflected IR light to the extent claimed by the applicant. Regarding Claims 20 – 23, Yanagimoto et al. does not explicitly teach that the surface temperature of the coated wall is lowered by at least 20° F, at least 30° F, at least 40° F, and/or at least 50° F, as recited in **Claims 20 – 23**. Specifically, Yanagimoto et al. is silent regarding the amount of temperature reduction the coated wall(s) experience. However, the process of Yanagimoto et al. (i.e., applying a heat / IR reflective paint comprising heat reflective metal oxide pigment(s) to a building / wall) is identical to the applicant's claimed process. Therefore, since the paint of Yanagimoto et al. functions in the same manner as the applicant's claimed paint, the painted wall of

Yanagimoto et al. would have inherently had reduced surface temperature(s) in the range claimed by the applicant.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krauthauser et al. in view of Tsuda et al. (USPN 6,359,030) or Slama (USPN 5,883,180).

14. Krauthauser et al. teaches all the limitations of **Claims 18 and 19** as set forth above in paragraph 9, except for a method wherein the wall paint comprises from 37 – 47% solids by weight and from 32 – 38% solids by volume. Specifically, Krauthauser et al. is silent regarding the solids content of the paint. Tsuda et al. teaches that the solids content of a paint is usually adjusted to between 20 and 90% (i.e., a range which encompasses the claimed range) on the basis of the paint and varies depending on the form of the paint, coating method, etc. (Col.14, lines 8 – 35). Slama teaches that paint solids can be described in weight percent solids or volume percent solids; the percent solids is related to the thickness of the dried film; and the viscosity of the paint is determined by the percent solids (Col.1, lines 3 – 37). The solids content of

the paints taught by Slama fall within the range claimed by the applicant (see Examples 1 – 5 on Cols. 5 – 8). Therefore, both Tsuda et al. and Slama teach that the solid content of a paint is a result / effective variable that is influenced by factors such as the form of the paint, the coating method, the desired thickness of the dried paint coating, and the viscosity of the paint. As such, it would have been obvious to one of ordinary skill in the art to optimize the solids content of the paint of Krauthauser et al. as a result / effective variable through routine experimentation depending on the desired viscosity, coating method, and thickness of the dried paint coating.

15. Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krauthauser et al. in view of Abe et al. (USPN 4,546,007) or Gilli (USPN 6,676,742).

16. Krauthauser et al. teaches all the limitations of **Claims 31 and 32** as set forth above in paragraph 9, except for a method wherein the primer is white (i.e., achromatic and reflects all visible light wavelengths, which is the definition of "white"). Specifically, Krauthauser et al. is silent regarding the color of the primer. Therefore, one of ordinary skill in the art would have been motivated to seek-out and use a primer color conventionally known in the art of painting. Gilli teaches that such a primer color is white (Abstract, Col.1, lines 30 – 36). It would have been obvious to one of ordinary skill in the art to utilize any conventionally known primer color, including white, as the primer of Krauthauser et al. with the reasonable expectation of success and obtaining similar results (i.e., providing a heat / IR reflective colored paint on a

wall, regardless of the color of the primer). Alternatively, Abe et al. teaches that a white or grey primer is preferred in the art of painting because it is easy to insure that the colored top-coat appears to be the proper color, regardless of the thickness of the top-coat (Abstract, Col.3, lines 45 – 54, Col.7, lines 1 – 13). Therefore, it would have been obvious to one of ordinary skill in the art to utilize a white or grey primer in the method of Krauthauser et al. in order to reap the benefits taught by Abe et al. (i.e., allowing the colored IR reflective paint of Krauthauser et al. to appear to be the desired color due to the presence of the white or grey undercoat / primer).

17. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krauthauser et al. in view of Shelley et al. (US 2004/0099807 A1).

18. Krauthauser et al. teaches all the limitations of **Claim 33** as set forth above in paragraph 9, except for a method wherein the primer is applied with a wet thickness of 16 to 20 mil. Specifically, Krauthauser et al. is silent regarding the primer thickness. However, Shelley et al. teaches that, in the art of primer coating, optimal adhesion of the paint coating is a function of its thickness. A minimum primer thickness is required to insure that (1) underlying visual features do not "bleed through" the coating and (2) a desired amount of protection is achieved. A maximum primer thickness is also specified (e.g., to insure that too much primer is not applied) (paragraphs [0002] – [0006]). In other words, Shelley et al. teaches that the primer coating thickness is a result / effective variable that should be optimized to insure that (1) underlying visual features do not "bleed through" the coating (2) a desired

amount of protection is achieved, and (3) optimum adhesion is achieved, while also insuring that too much primer is not applied. Therefore, it would have been obvious to one of ordinary skill in the art to optimize the wet thickness, and therefore the dry thickness, of the primer coating of Krauthauser et al. as a result / effective variable through routine experimentation in order to balance the factors discussed by Shelley et al. (i.e., adhesion, protection, bleed-through, etc.)

19. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krauthauser et al. in view of Beckenhauer (USPN 6,110,270).

20. Krauthauser et al. teaches all the limitations of **Claim 35** as set forth above in paragraph 9, except for a method wherein the primer is applied at approximately 50 – 60 square feet / gallon. Specifically, Krauthauser et al. is silent regarding the amount of primer per unit surface of coverage. However, Beckenhauer teaches that, in the art of applying a coating to a building material, the solution is typically applied at about 40 – 200 square feet / gallon (i.e., a range encompassing the claimed range), but the precise amount will vary depending on factors such as (1) the ambient temperature, (2) the viscosity of the coating material, and (3) the nature (porosity) of the surface to be coated. A surface with high porosity requires more coating per square foot than a surface with low porosity does (Col.6, lines 18 – 38). In other words, Beckenhauer teaches that the amount of coating material required per unit area is a result / effective variable that depends on factors such as the ambient temperature, viscosity of the coating, and especially the porosity of the

surface to be coated. Therefore, it would have been obvious to one of ordinary skill in the art to optimize the "square feet / gallon" surface coverage rate of the primer of Krauthauser as a result / effective variable through routine experimentation. The exact amount of primer required per unit area would, of course, be dependent on the nature of the primer (viscosity, etc.) and the surface to be coated (i.e., how porous the surface is).

21. Claims 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krauthauser et al. in view of SUPER COTE TEXTURED PRIMER technical data sheet (11/2003).

22. Krauthauser et al. teaches all the limitations of **Claims 34 and 35** as set forth above in paragraph 9, except for a method wherein the primer is "textured" and applied at approximately 50 – 60 square feet / gallon. Specifically, Krauthauser et al. is silent regarding the specific nature of the primer. However, the aforementioned technical data sheet teaches a textured primer that is applied at 45 – 60 square feet per gallon ("Application" section of data sheet) (i.e., within the applicant's claimed range) and has the following advantages: low VOC, water-based, stain blocking additives, hides irregular surfaces, and use on a variety of substrates ("Description", "Features", and "Benefits" section of the data sheet). Therefore, it would have been obvious to one of ordinary skill in the art to utilize the SUPER COTE TEXTURED PRIMER as the primer in the process of Krauthauser et al. with the reasonable expectation of

successfully and advantageously reaping the benefits of the primer disclosed in the data sheet and discussed above.

23. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanagimoto et al. in view of Tsuda et al. (USPN 6,359,030) or Slama (USPN 5,883,180).

24. Yanagimoto et al. teaches all the limitations of **Claims 18 and 19** as set forth above in paragraph 11, except for a method wherein the wall paint comprises from 37 – 47% solids by weight and from 32 – 38% solids by volume. Specifically, Yanagimoto et al. is silent regarding the solids content of the paint. Tsuda et al. teaches that the solids content of a paint is usually adjusted to between 20 and 90% (i.e., a range which encompasses the claimed range) on the basis of the paint and varies depending on the form of the paint, coating method, etc. (Col.14, lines 8 – 35). Slama teaches that paint solids can be described in weight percent solids or volume percent solids; the percent solids is related to the thickness of the dried film; and the viscosity of the paint is determined by the percent solids (Col.1, lines 3 – 37). The solids content of the paints taught by Slama fall within the range claimed by the applicant (see Examples 1 – 5 on Cols. 5 – 8). Therefore, both Tsuda et al. and Slama teach that the solid content of a paint is a result / effective variable that is influenced by factors such as the form of the paint, the coating method, the desired thickness of the dried paint coating, and the viscosity of the paint. As such, it would have been obvious to one of ordinary skill in the art to optimize the solids content of

the paint of Yanagimoto et al. as a result / effective variable through routine experimentation depending on the desired viscosity, coating method, and thickness of the dried paint coating.

25. Claims 1 – 17 and 20 – 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sliwinski et al. (USPN 6,454,848) in view of "There Goes The Sun" (PWC, Jan-Feb 2004), Krauthauser et al., or Yanagimoto et al.

26. Regarding independent **Claims 1 and 2**, Sliwinski et al. teaches a method of reducing energy consumption in a building (Col.2, lines 50 – 56, Col.10, lines 8 – 18), comprising painting the building with a heat / IR reflective paint comprising at least one heat reflective metal oxide pigment (Abstract, Col.1, lines 10 – 16, Col.2, lines 25 – 56, Col.3, line 20 – Col.5, line 37, Examples 1 – 21, and Col.10, lines 1 – 18), wherein the surface temperature of the coated architecture / building is lowered such that less energy is consumed to cool the interior of the building (Col.2, lines 50 – 56, Col.10, lines 8 – 18). While Sliwinski et al. does teach that the paint compositions are specifically used for "architectural applications" where increased IR reflectance would result in lower heat buildup and lower energy costs (Col.2, lines 50 – 56, Col.10, lines 8 – 18), Sliwinski et al. does not explicitly teach applying / coating the paint onto the external vertical wall(s) of a building. However, "There Goes The Sun" teaches that heat reflecting, energy saving coatings are typically applied to both the roofs and exterior walls of buildings (i.e., external vertical wall(s) of a building) in order to reduce the heat gain of the building during hot weather and

create energy savings (page 53). Similarly, Krauthauser et al. teaches that heat reflective paints are used to coat the exterior façade (i.e., external vertical wall(s)) of buildings (Col.5, lines 3 – 35) in order to reduce the amount of generated heat. Similarly, Yanagimoto et al. teaches that heat / IR reflective paints are used to coat the outer walls of buildings (i.e., the external vertical wall(s) of the building) in order to prevent the temperature of the rooms inside the building from rising (Col.1, lines 5 – 55, Col.2, lines 1 – 20). Therefore, based on any of the above teachings, it would have been obvious to one of ordinary skill in the art to paint the external vertical walls of a building with the paint of Sliwinski et al. in order to reap the benefits disclosed by Sliwinski et al. (i.e., lowering the surface temperature of the building so that less energy is consumed to cool the interior of the building). By coating the external walls of the building, one of ordinary skill in the art would have reasonably expected to maximize the positive result achieved due to the heat / IR reflective paint (i.e., because the more of the building that is painted, the more heat reflection is achieved). Regarding **Claims 3 – 5**, Sliwinski et al. also teaches the applicant's claimed metal oxide pigments and solid solution having a corundum-hematite crystal lattice structure (Abstract, Col.2, lines 25 – 56, Table 1, Col.4, lines 23 – 59, and Examples 1 – 21); the coated wall reflects light having the IR wavelengths claimed by the applicant (**Claims 6 – 11**) (Examples 1 – 21 and Figures 1 – 3); the IR reflectance is within the ranges claimed by the applicant (**Claims 12 – 14**) (Figures 1 – 3; Col.8, line 19); and the heat reflective wall paint is a dark color such as black, green, red, blue, etc. (**Claims 15 – 17**) (Col.8, lines 15 – 21, Tables 2 and 3).

Regarding Claims 20 – 23, Sliwinski et al. does not explicitly teach that the surface temperature of the coated wall is lowered by at least 20° F, at least 30° F, at least 40° F, and/or at least 50° F, as recited in **Claims 20 – 23**. Specifically, Sliwinski et al. is silent regarding the amount of temperature reduction the coated wall(s) experience. However, the process of Sliwinski et al. (i.e., applying a heat / IR reflective paint comprising heat reflective metal oxide pigment(s) to a building) is the same as the applicant's claimed process, and the amount of IR or heat radiation reflected by the paint of Sliwinski et al. is in the range disclosed and claimed by the applicant. Therefore, since the paint of Sliwinski et al. functions in the same manner and to the same degree as the applicant's claimed paint, the painted wall of the combination of Sliwinski et al. and any of "There Goes The Sun" (PWC, Jan-Feb 2004), Krauthauser et al., or Yanagimoto et al. would have inherently had reduced surface temperature(s) in the range claimed by the applicant.

27. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sliwinski et al. (USPN 6,454,848) in view of "There Goes The Sun" (PWC, Jan-Feb 2004), Krauthauser et al., or Yanagimoto et al., further in view of Tsuda et al. (USPN 6,359,030) or Slama (USPN 5,883,180).

28. Sliwinski et al. teaches all the limitations of **Claims 18 and 19** as set forth above in paragraph 26, except for a method wherein the wall paint comprises from 37 – 47% solids by weight and from 32 – 38% solids by volume. Specifically, Sliwinski et al. is silent regarding the solids content of the paint. Tsuda et al. teaches that the solids

content of a paint is usually adjusted to between 20 and 90% (i.e., a range which encompasses the claimed range) on the basis of the paint and varies depending on the form of the paint, coating method, etc. (Col.14, lines 8 – 35). Slama teaches that paint solids can be described in weight percent solids or volume percent solids; the percent solids is related to the thickness of the dried film; and the viscosity of the paint is determined by the percent solids (Col.1, lines 3 – 37). The solids content of the paints taught by Slama fall within the range claimed by the applicant (see Examples 1 – 5 on Cols. 5 – 8). Therefore, both Tsuda et al. and Slama teach that the solid content of a paint is a result / effective variable that is influenced by factors such as the form of the paint, the coating method, the desired thickness of the dried paint coating, and the viscosity of the paint. As such, it would have been obvious to one of ordinary skill in the art to optimize the solids content of the paint of Sliwinski et al. as a result / effective variable through routine experimentation depending on the desired viscosity, coating method, and thickness of the dried paint coating.

29. Claims 30 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sliwinski et al. (USPN 6,454,848) in view of "There Goes The Sun" (PWC, Jan-Feb 2004), Krauthauser et al., or Yanagimoto et al., further in view of Krauthauser et al. and Dainippon (JP 63-33406).

30. Sliwinski et al. teaches all the limitations of **Claim 30** as set forth above in paragraph 26, except for a method comprising applying a primer to the wall(s) before applying the heat reflective paint. However, Krauthauser et al. teaches that it was known in

the art to apply a primer to a surface prior to applying a heat reflective paint analogous to that of Sliwinski et al. (Col.5, lines 9 – 16), and Dainippon teaches that it is desirable to apply a primer to the walls of buildings before painting the buildings in order to enhance the adhesion properties (Abstract). Therefore, it would have been obvious to one of ordinary skill in the art to apply a primer to the walls prior to applying the heat reflective paint of Sliwinski et al. in order to reap the benefits taught by Dainippon (i.e., enhance adhesion to the walls due to the primer). Regarding **Claim 34**, all coatings, including primers, have some sort of surface texture (e.g., smooth, fine roughness, high roughness, etc.). Therefore, the primer of Krauthauser et al. and Dainippon is reasonably considered to be a "textured primer".

31. Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sliwinski et al. (USPN 6,454,848) in view of "There Goes The Sun" (PWC, Jan-Feb 2004), Krauthauser et al., or Yanagimoto et al., further in view of Krauthauser et al. and Dainippon (JP 63-33406), further in view of Abe et al. (USPN 4,546,007) or Gilli (USPN 6,676,742).

32. The combination of references teaches all the limitations of **Claims 31 and 32** as set forth above in paragraph 30, except for a method wherein the primer is white (i.e., achromatic and reflects all visible light wavelengths, which is the definition of "white"). Specifically, Krauthauser et al. is silent regarding the color of the primer. Therefore, one of ordinary skill in the art would have been motivated to seek-out and use a primer color conventionally known in the art of painting. Gilli teaches that such

a primer color is white (Abstract, Col.1, lines 30 – 36). It would have been obvious to one of ordinary skill in the art to utilize any conventionally known primer color, including white, as the primer with the reasonable expectation of success and obtaining similar results (i.e., providing a heat / IR reflective colored paint on a wall, regardless of the color of the primer). Alternatively, Abe et al. teaches that a white or grey primer is preferred in the art of painting because it is easy to insure that the colored top-coat appears to be the proper color, regardless of the thickness of the top-coat (Abstract, Col.3, lines 45 – 54, Col.7, lines 1 – 13). Therefore, it would have been obvious to one of ordinary skill in the art to utilize a white or grey primer in the method in order to reap the benefits taught by Abe et al. (i.e., allowing the colored IR reflective paint to appear to be the desired color due to the presence of the white or grey undercoat / primer).

33. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sliwinski et al. (USPN 6,454,848) in view of "There Goes The Sun" (PWC, Jan-Feb 2004), Krauthauser et al., or Yanagimoto et al., further in view of Krauthauser et al. and Dainippon (JP 63-33406), further in view of Shelley et al. (US 2004/0099807 A1).

34. The combination of references teaches all the limitations of **Claim 33** as set forth above in paragraph 30, except for a method wherein the primer is applied with a wet thickness of 16 to 20 mil. Specifically, Krauthauser et al. is silent regarding the primer thickness. However, Shelley et al. teaches that, in the art of primer coating, optimal adhesion of the paint coating is a function of its thickness. A minimum primer

thickness is required to insure that (1) underlying visual features do not "bleed through" the coating and (2) a desired amount of protection is achieved. A maximum primer thickness is also specified (e.g., to insure that too much primer is not applied) (paragraphs [0002] – [0006]). In other words, Shelley et al. teaches that the primer coating thickness is a result / effective variable that should be optimized to insure that (1) underlying visual features do not "bleed through" the coating (2) a desired amount of protection is achieved, and (3) optimum adhesion is achieved, while also insuring that too much primer is not applied. Therefore, it would have been obvious to one of ordinary skill in the art to optimize the wet thickness, and therefore the dry thickness, of the primer coating as a result / effective variable through routine experimentation in order to balance the factors discussed by Shelley et al. (i.e., adhesion, protection, bleed-through, etc.)

35. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sliwinski et al. (USPN 6,454,848) in view of "There Goes The Sun" (PWC, Jan-Feb 2004), Krauthauser et al., or Yanagimoto et al., further in view of Krauthauser et al. and Dainippon (JP 63-33406), further in view of Beckenhauer (USPN 6,110,270).

36. The combination of references teaches all the limitations of **Claim 35** as set forth above in paragraph 30, except for a method wherein the primer is applied at approximately 50 – 60 square feet / gallon. Specifically, Krauthauser et al. is silent regarding the amount of primer per unit surface of coverage. However, Beckenhauer teaches that, in the art of applying a coating to a building material, the solution is

typically applied at about 40 – 200 square feet / gallon (i.e., a range encompassing the claimed range), but the precise amount will vary depending on factors such as (1) the ambient temperature, (2) the viscosity of the coating material, and (3) the nature (porosity) of the surface to be coated. A surface with high porosity requires more coating per square foot than a surface with low porosity does (Col.6, lines 18 – 38). In other words, Beckenhauer teaches that the amount of coating material required per unit area is a result / effective variable that depends on factors such as the ambient temperature, viscosity of the coating, and especially the porosity of the surface to be coated. Therefore, it would have been obvious to one of ordinary skill in the art to optimize the "square feet / gallon" surface coverage rate of the primer as a result / effective variable through routine experimentation. The exact amount of primer required per unit area would, of course, be dependent on the nature of the primer (viscosity, etc.) and the surface to be coated (i.e., how porous the surface is).

37. Claims 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sliwinski et al. (USPN 6,454,848) in view of "There Goes The Sun" (PWC, Jan-Feb 2004), Krauthauser et al., or Yanagimoto et al., further in view of Krauthauser et al. and Dainippon (JP 63-33406), further in view of SUPER COTE TEXTURED PRIMER technical data sheet (11/2003).

38. The combination of references teaches all the limitations of **Claims 34 and 35** as set forth above in paragraph 30, except for a method wherein the primer is "textured" and applied at approximately 50 – 60 square feet / gallon. Specifically, Krauthauser

et al. is silent regarding the specific nature of the primer. However, the aforementioned technical data sheet teaches a textured primer that is applied at 45 – 60 square feet per gallon ("Application" section of data sheet) (i.e., within the applicant's claimed range) and has the following advantages: low VOC, water-based, stain blocking additives, hides irregular surfaces, and use on a variety of substrates ("Description", "Features", and "Benefits" section of the data sheet). Therefore, it would have been obvious to one of ordinary skill in the art to utilize the SUPER COTE TEXTURED PRIMER as the primer in the process with the reasonable expectation of successfully and advantageously reaping the benefits of the primer disclosed in the data sheet and discussed above.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Rose et al. (USPN 6,787,585), Sakoske et al. (USPN 6,171,383), Genjima et al. (USPN 6,366,397), Sullivan et al. (USPN 6,416,868), Nisshin Steel (JP 2002-331611 A), Miki (JP 2000-212475 A), and Nippon Paint (JP 2004-010853 A) all teach coating buildings / walls with a heat / IR reflective paint containing heat reflective metal oxide pigments.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wesley D. Markham whose telephone number is (571) 272-1422. The examiner can normally be reached on Monday - Friday, 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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